

From the INTERNATIONAL SEARCHING AUTHORITY

To:

HUBER & SCHÜSSLER
Attn. Huber, Bernard
Truderinger Strasse 246
D-81825 München
GERMANY

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year)

20/03/2003

Applicant's or agent's file reference

D 2399 / st

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/EP 02/ 14512

International filing date
(day/month/year)

18/12/2002

Applicant

DÜRING, Klaus

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
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Authorized officer

Katarina Faux

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|---|---|--|
| Applicant's or agent's file reference D 2399 / st | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/EP 02/14512 | International filing date (day/month/year) 18/12/2002 | (Earliest) Priority Date (day/month/year) 19/12/2001 |
| Applicant DÜRING, Klaus | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

+49 89 43778899;# 33

International Application No

PC1/EP 02/14512

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/82

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

BIOSIS, EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| Y | WO 99 58654 A (MAX PLANCK GESELLSCHAFT ;MOEHLMANN TORSTEN (DE); MARTINI NORBERT () 18 November 1999 (1999-11-18) see the whole document --- | 1-12 |
| Y | TJADEN J ET AL: "ALTERED PLASTIDIC ATP/ADP-TRANSPORTER ACTIVITY INFLUENCES POTATO (SOLANUM TUBERUM L.) TUBER MORPHOLOGY, YIELD COMPOSITION OF TUBER STARCH" PLANT JOURNAL, BLACKWELL SCIENTIFIC PUBLICATIONS, OXFORD, GB, vol. 16, no. 5, 1998, pages 531-540, XP000960526 ISSN: 0960-7412 see the whole document --- -/- | 1-12 |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

6 March 2003

Date of mailing of the international search report

20/03/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Grosskopf, R

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| Y | GAAL TAMAS ET AL: "Transcription regulation by initiating NTP concentration: rRNA synthesis in bacteria." SCIENCE (WASHINGTON D C), vol. 278, no. 5346, 19 December 1997 (1997-12-19), pages 2092-2097, XP002233693 ISSN: 0036-8075 see the whole document | 1-12 |
| Y | MAKITA N ET AL: "ATP/ADP switches the higher-order structure of DNA in the presence of spermidine" FEBS LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 460, no. 2, 29 October 1999 (1999-10-29), pages 333-337, XP004260427 ISSN: 0014-5793 see the whole document | 1-12 |
| A | GEIGENBERGER PETER ET AL: "Tuber physiology and properties of starch from tubers of transgenic potato plants with altered plastidic adenylate transporter activity." PLANT PHYSIOLOGY (ROCKVILLE), vol. 125, no. 4, April 2001 (2001-04), pages 1667-1678, XP002189694 ISSN: 0032-0889 | |
| A | GEIGENBERGER P ET AL: "OVEREXPRESSION OF PYROPHOSPHATASE LEADS TO INCREASED SUCROSE DEGRADATION AND STARCH SYNTHESIS, INCREASED ACTIVITIES OF ENZYMES FOR SUCROSE-STARCH INTERCONVERSIONS, AND INCREASED LEVELS OF NUCLEOTIDES IN GROWING POTATO TUBERS" PLANTA, SPRINGER VERLAG, DE, vol. 205, no. 3, July 1998 (1998-07), pages 428-437, XP000997825 ISSN: 0032-0935 | |

INTERNATIONAL SEARCH REPORT

Information on patent family members

1st Application No

PCT/EP 02/14512

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| WO 9958654 | A | 18-11-1999 | AU 4261099 A | 29-11-1999 |
| | | | BR 9910408 A | 09-01-2001 |
| | | | CA 2328394 A1 | 18-11-1999 |
| | | | CN 1306578 T | 01-08-2001 |
| | | | WO 9958654 A2 | 18-11-1999 |
| | | | EP 1078088 A2 | 28-02-2001 |
| | | | HU 0200074 A2 | 29-05-2002 |
| | | | JP 2002514412 T | 21-05-2002 |
| | | | PL 344751 A1 | 19-11-2001 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 02/14512**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 1-12 (partially)
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

International Application No. PCT/EP 02/14512

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-12 (partially)

The present claims are directed to a method for increasing the content of a transgene-encoded biomolecule in an organism, characterised by changing the distribution of ATP and/or ADP in cells of the organism. The expression "changing the distribution of ATP and/or ADP" is merely the characterisation of the essential feature by the desired result to be achieved without indicating the means how said change should be carried out. In addition, said expression neither indicates the extent of the change nor the exact localisation where said change should take place ("in cells").

In view of this vague and broad definition of the main feature and when taking into account that nearly each reaction in the cell involves a "change of distribution of ATP" (e.g. the use of glucose in a culture medium) a meaningful search for an accordingly characterised claim over the whole range is not possible.

As a consequence, the search had to be limited to the those means which were used in the present application in order to achieve the change of ATP/ADP distribution, i.e. the use of the cloned plastidiary ATP/ADP transporter.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.